September 23, 2011 NIST Smart Grid Privacy Subgroup Meeting Notes

Minutes by Rebecca Herold

Please send this distribution list any necessary corrections or additions.

Next full group teleconference meeting:

Friday October 7, 2011 at 11:00am edt

Here are my summary notes from the meeting:

1. Past meeting notes

- See http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/CSCTGPrivacy

2. Team Updates

a. Third Party Team: Brent Struthers (team lead)

- Tanya: This morning a word doc was distributed to the team. Used the CA PUC definitions into a table, and Brent changed it to look at the parts of the PUC covered by the NAESB work, etc. Will go across and identify what still needs to be done. Would like to have meeting next week.

b. Privacy Use Cases Team: Christine Hertzog (team lead)

- Christine: All the use cases through the first round of reviews. Now on to the 2nd and 3rd round of reviews. Will then send to the full group. Interesting logistical challenge, but are moving ahead. Goal is to finish by mid-October.
- Tanya: Told Marianne and she was very pleased.

c. PEV Team: Mike Coop (team lead)

- Tanya: Sent an email this week, but haven't gotten anything back from him yet.

d. NSTIC Team: Krystina Schaefer/Amanda Stallings (team leads)

- Amanda: Still on hold and monitoring news.
- Tanya: Jeremy Grants and company are still working on the governance details. So, our team is waiting to see what that will be. So team on hold until we see what they come out with.

e. Training and Awareness Team: Rebecca Herold (team lead)

- Rebecca: Creating training slide-sets to provide tools for organizations involved with the smart grid to use to help facilitate their internal training and awareness about smart grid privacy issues and risks
  - Will provide free via SGIP, NICE, NIST, and other venues
  - Include speaker notes
  - Organizations can take and customize to fit their business environment

- First group-specific set of slides almost finished: Utilities My goal is to have our team finish at our next meeting, this coming Monday. We will then provide to our full group for review and feedback. From there will provide through one of the previously mentioned communications venues.
- Other identified groups will also have sets of slides

- Isara: Can we see now?
- Rebecca: Before next full group? You're welcome to attend our team meetings. We won't be putting anything out to the full group until we get the draft finished.
- Ward: Anyone attend the NICE meeting this week?
- Tanya: No, but a close colleague did.
- Ward: Want a better idea of how that went this week.
- Rebecca: I'll put NICE on next agenda

2. Miscellaneous

a. General discussion: Smart meters revealing various types of habits (e.g., TV viewing such as discussed at http://www.h-online.com/security/news/item/Smart-meters-reveal-TV-viewing-habits-1346385.html)
   - Are smart meters, as they currently exist, providing any portion of enablement for such interpretation of very specific viewing/listening/etc. habits?
   - Or, are plans for smart meters of the near/far future going to support such viewing (or otherwise) analysis?
   - And, if so, will this data likely/possibly flow from smart meters to utilities, via the smart grid?
   - Ken: The issue is not about what the smart meter is collecting. However, a lot can be inferred from the frequency of how often the readings are made. This concept started in the 1980s at EPRI about how to interpret habits.
   - Klaus: This had the 6 second readings, but not necessarily sent to the utilities. Much can be inferred based upon data that is collected frequently.
   - Ken: Talked about an experiment from 15 years ago.
   - Isara: Any guidance to utilities on how often frequencies should be made?
   - Ken: Ontario commissioner call yesterday. Keep only as long as needed.
   - Ward: Southern Company; with regard to times, the time from the utilities are less than the PUCs. Typically the PUCs or customers are the ones that provide the frequency requirements. That needs to be taken into consideration. In CA that is a PUC requirement. They want frequent reads; every 15 minutes.
   - Ken: How long to retain data?
   - Ward: A PUC requirement. For analysis and historical purposes for 2 years.
   - Ken: Identifiable to customer?
   - Ward: To the device, not the customer. Customer is linked to device, not vice versa. Cannot assume an individual's device is stored in one location. The link is combined during processing. A court request would enable to provide it. Needed for analytical information. Also, for disputes, must have that data discoverable for a specific period of time. Two issues: what commissions require, and what the customers are demanding. We'd actually rather get rid of it. Southern Company takes reads daily, don't currently need to do it more often. However, some customers what hourly, 30-minute, etc. readings.
   - Klaus: In Holland there must be an interface between the meter and the customers' computer to allow the customer to choose. However, the utility only gets summary data around 4 times a day, but it varies depending upon the energy source. Also,

substations aggregate so that the utility does not get individual data. For consumer is it easy to speak with the meter directly.

- Ward: That is the big thing from utilities. Reality is negating what is actually required. Utilities don't really want to do what the articles are describing. Speaking with other EU utilities, they are not storing that data very often, or they are aggregating to give to customers.
- Lee: Consumers need to be aware, though. This issue should not be minimized. Two very different vectors of leakage. The NOAM is based upon the appliances. The new research has to do with power line emissions, and what you can learn from the noise signatures. Looking at 8 different models of TVs. If capturing noise on power line interference on a home network, you can see and identify any of the appliances being used. Created database of movies. Came up with distinct signatures of the movies. So the signatures for different movies are very different. Don't know if this can be done from the data in smart meters. But when you can see the data is in the signal, it is worth seeing if it is also in the smart meter.
- Ward: Agree with that. Similar to research around keyboards and keystroke monitoring and related currents. My concern is saying the smart meter and/or the utility is doing that. Currently those capabilities are not there. No ability to do interval readings that would be required for such monitoring. Where we could apply would be within the in-home management devices and networks. Those are what is monitoring the home networks. That is the customer side. I think we should focus there.
- Lee: My friends have a device that watches that activity. Since it was in the home, it was outside of the smart grid scope.
- Ward: Agree with that. My frustration is that many things are talking about smart meters, when it is really the home energy management systems in the home that are presenting the most risks. They are not using the AMI system or utility to do the activities. It is done through a completely different path. Those are where concerns exist.
- Tanya: Well, we're kind of not. Because the home appliance devices don't touch the grid, it does not qualify as "smart grid". You don't need them to get the smart gird to work. While it's related, it is not smart grid technology.
- Ken: Doesn't smart grid extend to the home generators, and other energy production items from consumers?
- Tanya: If it touches the grid, yes. However, if it doesn't connect to the smart meter or smart grid, then it doesn't. Pricing data from the grid and meter, then yes. But other activities, no. I can ask Marianne if we can extend into this, but in past there has been kick back.
- Ward: Argument is that if Zigby is in scope, then home network should be in scope. Perhaps defining a home management system that communicates with utilities should be in scope, and others not others.
- Tanya: If touches the utility somehow, then it is in scope.
- Klaus: Talking about two different things. The German study uses data from smart meters. It is in scope. The meter is collecting the data.
- Ward: They use something else besides the meters.
- Klaus: They get data in 6 second intervals. They could determine movies from that.
- Allen: Unfortunate that RFID history, what happened with them. Read that paper. It was well controlled. Neural network processing and a fixed set of movies. That's different than looking at the universe of content. There is a danger of arming the smart meter and then riling up the public
- Ken: Not a matter of riling the public, but of identifying what is possible and feasible.
- Allen: Important to be clear that we should not look at theoretical but stick to doable.

- Ken: Look at OnStar. If they start collecting from people who didn't sign up.
- Allen: We don't want to stop the widespread adoption.
- Ken: If policy makers say don't tell me about it if it isn't worth the time.
- Allen: Isn't that what PUCs are for? You can take any technology and misuse it.
- Rebecca: Our group has a great opportunity to identify privacy risks related to this vast new network and the related technologies. We are looking at issues that have never existed before. We cannot depend upon one group to have all the answers already. We have PUCs in our group, and they bring their input and perspective. That is a great benefit of our group; we have many different perspectives looking thoroughly at the many different aspects of privacy. It is up to us to document our findings and recommendations based upon this collaborative work.
- Allen: If someone could say when these issues are feasible that would be helpful. Danger is that if there is a headline to consumers then there is a danger to crimp the technology.
- Rebecca: Yes communication is important. It is up to us to provide as clear communication as possible. As with any privacy, or information security issue for that matter, where and when the issues will be feasible will vary based upon the entities and technologies involved. A lot also depends upon how consumers decide to implement not only smart meters (where they have a choice) but also their own HANs and other related equipment.
- Allen: Has anyone talked to the Neilsen company to see if they plan to do this? At ABC and NBC they were always looking at such metering capabilities.
- Ken: Guess they don't know about it.
- Lee: Major thing about smart meters and smart grid is that is it possible to build in. Worry about the scale effects. One thing to attack the home, but another thing to exploit the data.

b. Meetings are every other Friday

c. Next full group meeting will be Friday, October 7

d. If you know of any speakers who would be interesting and useful to provide a discussion for our group, let me know.

e. Other issues or news related to smart grid privacy? None brought up.

Thanks,

Rebecca